



无锡威达智能电子股份有限公司

产  
品  
规  
格  
书

# 蓝牙遥控器产品规格书

BLE remote control product specification

客户单位: 亚旭电子科技(江苏)有限公司  
Client unit  
客户料号: 04AD-00DUN00  
Customer Material Num.  
威达料号: WH-6255 BLE  
WeiDa Material NO.  
产品类型: 蓝牙+语音+IR  
Product Type  
日 期: 2020-07-14  
Day period  
拟 制: Nick  
Proposed  
批 准: \_\_\_\_\_  
Batch registration

承制方: 无锡威达智能电子股份有限公司

Party to the contractor: Wuxi Weida Intelligent Electronics Co.,Ltd.

地 址: 江苏省无锡市梁溪区南湖大道 789 号 A 栋 2-3 楼

(传感器高端制造基地)

Address : Liangxi District, Wuxi, Jiangsu Province, South Lake  
Avenue 789 No.A building 2-3 building (sensor high-end  
manufacturing base)

电 话: 0510-85421878

传 真: 0510-85388557

TEL : 0510-85421878

FAX : 0510-85388557

网 址: <http://www.cnwddz.com>

MAIL : <http://www.cnwddz.com>

# 规格书变更履历表

Change of specification book resume

| 日期<br>Date | 版本<br>Version | 修改章节<br>Modify<br>Chapter | 描述<br>Describe                          | 拟制<br>Proposed | 备注<br>Note |
|------------|---------------|---------------------------|-----------------------------------------|----------------|------------|
| 2020-07-14 | V1.0          |                           | 创建                                      | Nick           |            |
| 2020-07-21 | V2.0          | 第二章                       | 修改效果图                                   | Nick           |            |
| 2020-07-21 | V2.1          | 第八、<br>九、十章               | 修改图纸                                    | Nick           |            |
| 2020-07-24 | V2.2          | 第四章                       | 遥控器增加<br>恢复出厂设<br>置、SSU 功<br>能          | Nick           |            |
| 2020-08-13 | V2.2          | 第四章                       | 修改 SSU 功<br>能描述                         | Nick           |            |
| 2020-08-17 | V2.1          |                           | 升级 SW 版<br>本，更改硬<br>件型号；更<br>改功能描述<br>等 |                |            |
| 2020-08-20 | V2.2          | 第四章                       | 修改低电压<br>描述                             | Nick           |            |
| 2020-10-09 | V2.3          | 第四章                       | 增加指示灯<br>状态描述                           | Nick           |            |

## 遥控器版本信息表

|          | 型号<br>Model                    | 版本<br>Version | 日期<br>Date | 拟制<br>Proposed |
|----------|--------------------------------|---------------|------------|----------------|
| 软件<br>SW | 080060030601000006151055200815 | V006          | 20-08-15   |                |
| 硬件<br>HW | WH-6308_BLE                    | V1.0          | 20-08-13   | Nick           |

## 目录

|                                                    |    |
|----------------------------------------------------|----|
| 一、遥控器测试条件及参数.....                                  | 5  |
| Remote Control test conditions and parameters..... | 5  |
| 二、遥控器产品效果图.....                                    | 13 |
| Effect picture of remote controller product.....   | 13 |
| 三、遥控器键值.....                                       | 14 |
| Remote control key value.....                      | 14 |
| 四、遥控器按键操作说明.....                                   | 15 |
| Remote Control key action Description.....         | 15 |
| 五、遥控器设计原理图.....                                    | 22 |
| Schematic diagram of remote controller design..... | 22 |
| 六、遥控器 PCB 设计图.....                                 | 23 |
| Remote control PCB design.....                     | 23 |
| 七、遥控器锅仔片图档.....                                    | 24 |
| Remote control pot picture file.....               | 24 |
| 八、遥控器爆炸图.....                                      | 25 |
| Remote detonation map.....                         | 25 |
| 九、遥控器包装示意图.....                                    | 26 |
| Schematic diagram of remote control package.....   | 26 |
| 十、按键荷重分布图.....                                     | 24 |
| Refer to keystroke load distribution map.....      | 24 |

## 一、遥控器测试条件及参数

Remote Control test conditions and parameters

### 1、 硬件要求

Hardware requirements

| 序号<br>NO. | 说明项目<br>Description<br>Project                | 技术规格<br>Technical Specifications                                                                                         | 备注<br>Note |
|-----------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|
| 1         | 按键数<br>Number of keys                         | 15 键<br>15Keys                                                                                                           |            |
| 2         | 遥控器尺寸<br>Remote control<br>size               | 150*39*19mm                                                                                                              |            |
| 3         | 按键自由高度<br>Button Free<br>Height               | $\leq 2\text{mm}$                                                                                                        |            |
| 4         | 按键作用后高度<br>The height after<br>the key action | $\geq 0.15\text{mm}$                                                                                                     |            |
| 5         | 按键作用力<br>Key force                            | 参照按键荷重分布图<br>Refer to keystroke load<br>distribution map                                                                 |            |
| 6         | 外壳塑胶材质<br>Shell Plastic<br>Material           | ABS 原料（无味、不掺回料），厚度<br>$\geq 2.0\text{mm}$<br>ABS raw material (tasteless, no<br>blending), thickness $\geq 2.0\text{mm}$ |            |
| 7         | 外壳颜色<br>Shell Color                           | 实色注塑黑色，<br>Solid color injection black,                                                                                  |            |
| 8         | 丝印<br>Screen printing                         | 耐酸耐醇耐磨<br>Acid-resistant and alcohol-<br>resistant                                                                       |            |

|    |                                                       |                                                                                                                                                    |  |
|----|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 9  | PCB 电路板材质<br>PCB Circuit board Material               | 环氧玻纤板                                                                                                                                              |  |
| 10 | PCB 布线线宽及<br>间距<br>PCB Cabling line width and spacing | $\geq 0.3\text{mm}$                                                                                                                                |  |
| 11 | 表面涂敷处理<br>Surface Coating Treatment                   | 详细见遥控器《外观及工艺要求》<br>See the remote control 《appearance and process requirements》 in detail                                                          |  |
|    |                                                       | 表面应平整牢固，不允许有划痕，<br>斑疵、流挂、脱落和破损<br>Surface should be flat and firm, not allowed to have scratches, spot defects, flow hanging, peeling and breakage |  |
| 12 | 电路板制作要求<br>Board Production requirements              | 所有印刷电路板均应防腐蚀<br>All printed circuit boards shall be corrosion resistant                                                                            |  |
|    |                                                       | 不允许有飞线<br>No flying lines are allowed                                                                                                              |  |
|    |                                                       | 焊点饱满，无虚焊、脱焊、连锡<br>Solder joints full, no virtual welding, off welding, Lianxi                                                                      |  |
| 13 | 按键要求<br>Key requirements                              | 按键胶边缘结构需增加“防水墙”，以达到按键装配后，用手指扣时不能脱出胶壳按键孔；按键面定位过孔采用硅胶包塑胶设计，使整个硅胶按键面没有破孔，以保证长时间使用板面整洁，硅胶按键需                                                           |  |

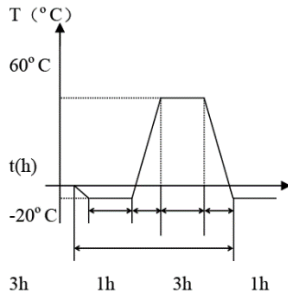
|    |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
|----|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|    |                                                       | <p>偏硬</p> <p>Key adhesive edge structure should be added "waterproof wall", in order to achieve the key assembly, the finger buckle can not be out of the plastic shell button hole, key surface positioning through the hole using silicone rubber bag plastic design, so that the entire silicone button surface has no holes to ensure that the use of a long plate surface neat, silicone key need to be hard</p> |  |
| 14 | <p>导电胶材质</p> <p>Conductive adhesive Material</p>      | <p>必须使用硅胶原料（不加粉），并且没有刺激性气味</p> <p>Must use silicone material (no powder) and no pungent odor</p>                                                                                                                                                                                                                                                                                                                      |  |
| 15 | <p>Metal dome（锅仔片）</p> <p>Metal Dome (pot slices)</p> | <p>遥控器所有按键采用 metal dome 按键，并且寿命必须<math>\geq 50</math> 万次，连续按压测试次数<math>\geq 30</math> 万次，可恢复到原荷重</p> <p>Remote control all keys to use the metal Dome button, and the life must be <math>\geq 5</math> million times, continuous press test number <math>\geq 3</math> million times, can restore to the original load</p>                                                                                            |  |

## 2、 产品规格

### Product Specifications

| 序号<br>NO. | 项目<br>Project                            | 规格参数<br>Specification parameter | 备注]<br>Note |
|-----------|------------------------------------------|---------------------------------|-------------|
| 1         | <p>工作温度</p> <p>Operating temperature</p> | 0~50℃                           |             |
| 2         | <p>相对湿度</p> <p>Relative humidity</p>     | $\leq 95\%$                     |             |

|    |                                          |                                                                                                                                                                    |  |
|----|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 3  | 大气压力<br>Atmospheric pressure             | 86~106Kpa                                                                                                                                                          |  |
| 4  | 环境照度<br>Ambient illumination             | 自然光或荧光灯 200±50LX<br>Natural light or fluorescent lights 200± 50LX                                                                                                  |  |
| 5  | 主控<br>MCU                                | TL8R8251                                                                                                                                                           |  |
| 6  | 外壳材料<br>Shell material                   | ABS                                                                                                                                                                |  |
| 7  | 样品颜色<br>Sample Color                     | 参考客户需求规格<br>Reference Customer Requirements Specifications                                                                                                         |  |
| 8  | 电池规格<br>Battery specification            | AAA 1.5*2                                                                                                                                                          |  |
| 9  | 自由跌落试验<br>Free Drop test                 | 从 0.8 米高度，六面依次自由跌落在不小于 3cm 厚木制地板，三个循环。<br>From a height of 0.8 m, the floor is free to fall in a wooden floor of not less than 3 cm in sequence, and three cycles. |  |
| 10 | 静电环境试验<br>Electrostatic environment test | ±8KV                                                                                                                                                               |  |
| 11 | 高温储存试验<br>High Temperature Storage test  | 60℃                                                                                                                                                                |  |
| 12 | 低温储存试验<br>Low Temperature storage test   | -20℃                                                                                                                                                               |  |
| 13 | 恒定湿热试验<br>Constant damp heat test        | 40℃相对湿度 90±2%<br>40℃ Relative Humidity 90± 2%                                                                                                                      |  |

|    |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
|----|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 14 | <p>温度循环变化试验</p> <p>Temperature Cycle Change Test</p>                           |  <p>The graph shows a temperature profile over time. The vertical axis is Temperature (T) in °C, with marks at 60°C and -20°C. The horizontal axis is time (t) in hours (h). The profile consists of a ramp up from -20°C to 60°C, a dwell at 60°C for 1h, a ramp down to -20°C, a dwell at -20°C for 1h, and then the cycle repeats. The total time for one cycle is 3h.</p>                                |  |
| 15 | <p>验收标准</p> <p>Acceptance criteria</p> <p>MIL-STD-105E-<br/>LEVEL (II) AQL</p> | <p>重缺陷 (A 类) AQL=0.65</p> <p>Heavy defects (A Class) aql=0.65</p> <p>轻缺陷 (C 类) AQL=1.5</p> <p>Light defect (C Class) aql=1.5</p>                                                                                                                                                                                                                                                                                                                                                               |  |
| 16 | <p>遥控器运输及储存条件</p> <p>Remote control transport and storage conditions</p>       | <p>运输途中应避免雨雪直接侵袭或者强烈冲击。</p> <p>遥控器应储存在环境温度-20℃~+60℃，相对湿度不大于80%，周围没有强磁场、腐蚀物质和其它有害气体的库房中，储存期为一年。超过一年的产品经重新评估合格后，方可流入市场。</p> <p>In transit should avoid direct attack of rain or snow or strong impact.</p> <p>The remote control should be stored at ambient temperature-20℃~+60℃, the relative humidity is not greater than the 80%, with no strong magnetic field, corrosive substances and other harmful gases in the storehouse, the storage period is one year. After the product has n</p> |  |

|  |  |                                                                       |  |
|--|--|-----------------------------------------------------------------------|--|
|  |  | reassessed for more than one year, it can be brought into the market. |  |
|--|--|-----------------------------------------------------------------------|--|

### 3、产品规格（蓝牙部分）

Product Specifications (BLE Part)

| 序号<br>No. | 项目<br>Project                                     | 描述<br>Describe                                                                                                                                                                                                                                                          | 备注<br>Note |
|-----------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 1         | 使用电池<br>Use battery                               | 碱性环保电池<br>Alkaline Environmental Protection Battery                                                                                                                                                                                                                     |            |
| 2         | 供电电压<br>Supply voltage                            | 2.2-3.6V                                                                                                                                                                                                                                                                |            |
| 3         | 电流描述<br>Current description                       | $\leq 3\text{mA}$ 待机功耗（与机顶盒链接）<br>$\leq 3\text{mA}$ standby power (Link to box)<br>$\leq 5\text{mA}$ 发射功耗（常规按键）<br>$\leq 5\text{mA}$ emission power consumption (general key)<br>$\leq 25\text{mA}$ 录音功能（语音功能）<br>$\leq 25\text{mA}$ recording feature (voice function) |            |
| 4         | 音频输出<br>Audio output                              | 单声道、16K 采样率、16bit 精度音频输出<br>Mono, 16K sampling rate, 16bit Precision Audio output                                                                                                                                                                                       |            |
| 5         | 传输距离<br>（蓝牙）<br>Transmission Distance (Bluetooth) | $\geq 12\text{m}$ （周围无遮挡物）<br>$\geq 12\text{m}$ (no shelter around)                                                                                                                                                                                                     |            |
| 6         | 蓝牙协议<br>（蓝牙）                                      | 蓝牙 5.0 协议<br>Bluetooth 5.0 protocol                                                                                                                                                                                                                                     |            |

|    |                                                    |                                                                                                                                                                                                                                                                                               |  |
|----|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|    | Bluetooth protocol (Bluetooth)                     |                                                                                                                                                                                                                                                                                               |  |
| 7  | 信号要求<br>(蓝牙)<br>Signal requirements (Bluetooth)    | 满足通信传输距离要求, 同时符合蓝牙 BQB 认证要求<br><br>Meet the communication transmission distance requirements, while complying with the Bluetooth BQBCertification Requirements                                                                                                                                |  |
| 8  | 语音要求<br>(蓝牙)<br>Voice requirements (Bluetooth)     | 语音软件识别率 $\geq 90\%$ (句), 有干扰情况下: 语音识别率 $\geq 85\%$ (句) (需要确认和机顶盒和软件正常状态)<br><br>The speech software recognition rate $\geq 90\%$ (sentence), has the interference case: the speech recognition rate $\geq 85\%$ (needs to confirm and the set-top box and the software normal state)          |  |
| 9  | 连接响应<br>(蓝牙)<br>Connection response (Bluetooth)    | $\leq 200\text{ms}$ , 这里是指恢复连接速度, 通过遥控器端测试开始广播到被连接上的时间间隔<br><br>$\leq 200\text{ms}$ , this refers to the speed at which the connection is restored, the time interval at which the test begins broadcasting to the connected                                                                  |  |
| 10 | 其他通用蓝牙设备影响<br>Other common Bluetooth device impact | HOST 端适配的驱动, 要不影响原有的蓝牙通用设备支持, 如蓝牙耳机/音响 (HSP/HFP, A2DP 等), 蓝牙键盘, 蓝牙鼠标, 游戏手柄等。<br><br>HOST End Adapter driver, or affect the original Bluetooth universal device support, such as Bluetooth headset /Audio (HSP/HFP, A2DP , etc.), Bluetooth keyboard, Bluetooth mouse, game handles and so on. |  |

|    |                                                 |                                                                                                                                         |  |
|----|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--|
| 11 | 音频传输要求<br>Audio<br>Transmission<br>Requirements | 音频传输无异常，无明显干扰、丢数据、截幅等现象<br>No abnormal audio transmission, no obvious interference, loss of data, cutting amplitude and other phenomena |  |
| 12 | 麦克风灵敏度<br>Microphone<br>Sensitivity             | 灵敏度 $-42\pm 3\text{dB}$<br>Sensitivity $-42\pm 3\text{dB}$                                                                              |  |
| 13 | 麦克风信噪比<br>Microphone<br>Signal-to-noise ratio   | 不能低于 58dB<br>cannot be less than 58dB                                                                                                   |  |

## 二、遥控器产品效果图

Effect picture of remote controller product

| 序号 | 变更内容         | 标识 | 日期      | 制定   | 审核 |
|----|--------------|----|---------|------|----|
| 1  | 变更语音符号为四点    |    | 20.7.21 | Nick |    |
| 2  | 变更遥控器外观为新模具  |    | 20.8.14 | Nick |    |
| 3  | 变更遥控器SW为V006 |    | 20.8.17 | Nick |    |
|    |              |    |         |      |    |
|    |              |    |         |      |    |

正面

侧面      背面

**1. 遥控器外壳颜色**

■ PT Black C (实色注塑)

**2. 塑壳按键颜色**

■ PT Black C (实色注塑)

□ PT White C (实色注塑)

■ PT 1925 C (实色注塑)

**3. 塑壳印刷颜色**

□ PT White C

■ PT Black C

■ PT 2173 C

■ PT 179 C

■ PT 2257 C

■ PT 7549 C

■ PT 1795 C (NETFLIX)

**4. 底壳印刷颜色**

□ PT White C

**5. logo印刷颜色**

■ PT 429 C

**6. logo尺寸: 20x9mm**

**7. 生产追溯标签**

WH190826B/ROH/Vxxx

WH190826B/ROH/Vxxx  
 遥控器软件版本号  
 ROH标示  
 生产线体  
 生产日期  
 威达标示

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| 尺寸范围      | 公差    | 无锡威达智能电子股份有限公司 |     |    |                |    |            |
|-----------|-------|----------------|-----|----|----------------|----|------------|
| 0-10mm    | ±0.1  | 客户             | *   | 图名 | WH-6255_BLE效果图 | 图幅 | A4         |
| 10-50mm   | ±0.2  |                |     |    |                |    |            |
| 50-100mm  | ±0.25 | 品名             | *   | 模号 | -              | 单位 | MM         |
| 100-150mm | ±0.3  | 版本             | A03 | 设计 | Nick           | 日期 | 2020-07-13 |
| 150-200mm | ±0.35 | 材质             | -   | 审核 |                | 比例 | 1:1        |
| >200mm    | ±0.4  | 缩水             | -   | 批准 |                | 张次 | 1/1        |
| 角度        | ±2°   | 尺寸             | -   | 路径 | -              |    |            |

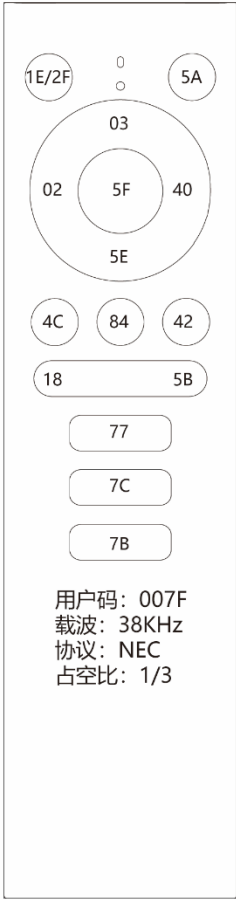
### 三、遥控器键值

Remote control key value

| 序号 | 变更内容            | 标识 | 日期      | 制定   | 审核 |
|----|-----------------|----|---------|------|----|
| 1  | 增加IR Power键值2F; |    | 20.8.19 | Nick |    |
|    |                 |    |         |      |    |
|    |                 |    |         |      |    |

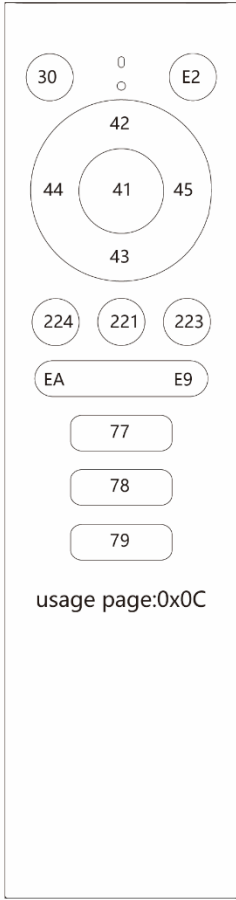


**IR**



用户码: 007F  
载波: 38KHz  
协议: NEC  
占空比: 1/3

**BLE**



usage page:0x0C

注: 在遥控器未配置之前, IR Power发1E;  
在遥控器配置后, 未连接蓝牙后,  
IR power发2F+电视机Power

| 尺寸范围      | 公差    | 无锡威达智能电子股份有限公司 |     |    |                |    |            |
|-----------|-------|----------------|-----|----|----------------|----|------------|
| 0-10mm    | ±0.1  | 客户             | *   | 图名 | WH-6255_BLE键值表 | 图幅 | A4         |
| 10-50mm   | ±0.2  | 品名             | *   | 模号 | -              | 单位 | MM         |
| 50-100mm  | ±0.25 | 版本             | A01 | 设计 | Nick           | 日期 | 2020-07-13 |
| 100-150mm | ±0.3  | 材质             | -   | 审核 |                | 比例 | 1:1        |
| 150-200mm | ±0.35 | 缩水             | -   | 批准 |                | 张次 | 1/1        |
| >200mm    | ±0.4  | 尺寸             | -   | 路径 | -              |    |            |
| 角度        | ±2°   |                |     |    |                |    |            |

## 四、遥控器按键操作说明

### Remote Control key action Description

- 1、 当遥控器未连接上机顶盒时，发送红外键值；连上机顶盒蓝牙，遥控器发蓝牙键值；

When the remote control is not connected to the set-top box, the infrared key value is sent; when the set-top box Bluetooth is connected, the remote control sends the Bluetooth key value;

- 2、 指示灯状态：遥控器上电后，指示灯常亮 1 秒，未连接状态下，指示灯连续闪烁 6 下；连接状态下，按按键指示灯不亮，使用语音时，指示灯常亮，指示灯为红色。

Infrared State: When the remote controller is powered on, the indicator light is always on for 1 second, In the unconnected state, the light flashes continuously for 6 times; In the connected state, the indicator light is off when the button is pressed. When using voice, the indicator light is always on and the indicator light is red.

- 3、 配对功能：当同时按住 “OK” 和 “Vol-” 键并持续三秒，同时指示灯闪烁；配对广播包时间为 2 分钟，超时后，指示灯熄灭；

Pairing function: When the "OK" and " Vol- " keys are kept down for three seconds, while the LED are blinking,Pairing broadcast packet time is 2 minutes, After timeout, the indicator light goes out;

- 4、 恢复出厂设置：当同时按住 “OK” 和 “Vol+” 键并持续三秒，等待指示灯闪烁 3 下后，表示此时遥控器以及恢复出厂设置；

Rest factory settings: When you press and hold the "OK" and "Vol+" buttons at the same time for 3s, and wait for the LED to flash 3 times, it means that the remote control and factory settings are rested;

Connection interval<12ms;

遥控器距离>10m;

Remote control distance >10m;

- 5、 支持蓝牙遥控器在线升级，盒子上电时自动检测遥控器版本，版本低于服务器推送版本时自动升级；

Bluetooth remote control to support the online upgrade, box on the power automatically detect the version of the remote, version less than the server push version automatically upgrade;

#### 6、 蓝牙设备名: DynalinkRemote。

Bluetooth device Name:DynalinkRemote.

#### 7、 支持“OK”+“back”上传 bug report 功能

Support for "OK"back" upload bug report feature.

#### 8、 遥控器 SSU 功能:

RCU SSU Function

##### 1、 IR 学习之前状态:

State before learning

蓝牙链接: BT Power 按键可以控制 BOX 进入 sleep/wakeup, 音量、静音按键控制 BOX 音量,

BT connected: BT Power button can control BOX to enter sleep/wakeup, volume and mute button can control BOX volume;

蓝牙未链接: IR Power 按键可以控制 BOX 进入 sleep/wakeup, 音量、静音按键控制 BOX 音量;

BT unconnected: IR Power button can control BOX to enter sleep/wakeup, volume and mute button can control BOX volume;

##### 2、 IR 学习之后状态:

State after learning

蓝牙链接: IR Power 控制 TV, BT Power 按键发一个键值只 wakeup BOX, 音量、静音按键控制 TV 音量; (IR Power+BT Power)

BT connected: IR Power controls TV, BT Power button sends a key value to wakeup BOX, volume and mute button controls TV volume

蓝牙未链接: IR Power 控制 TV, IR Power 同时发另一个红外键值

(2F) 控制 BOX, 音量、静音按键控制 TV 音量。(IR Power+2F+wakeup)

BT unconnected: IR Power controls TV, IR Power also sends another infrared key (2F) to control BOX, volume and mute button controls TV volume (IR Power+2F+wake up)

## 9、手工 TV 配置方式：

### Manual TV configuration method

进入 APK 后，APK 自动跳转到相应品牌下进行配置，UI 界面需提示长按静音键进行配置，此时 APK 进行搜索码库，配置遥控器，直到静音图标出现后，松开静音键，表示遥控器已经配置完成，并存储 TV 信息。

After entering the APK, the APK will automatically jump to the corresponding brand for configuration. The UI interface needs to prompt to press and hold the mute button for configuration. At this time, the APK searches the code library and configures the remote control. After the mute icon appears, release the mute button to indicate The remote control has been configured and stored TV information.

## 10、遥控器锁键功能：

### Remote control key lock function

长按遥控器按键 30s，遥控器停止发码；抬起按键即恢复正常状态；

Long press the button on the remote control for 30s, the remote control stops sending codes; raise the button and it will return to normal status;

## 11、遥控器其他要求：

other remote control requirements:

- 1、配对功能要求：不得存在扫描不到蓝牙设备或配对不上（包括短时间内连续按配对键）的问题，请验证 50 次确保无问题；

The pairing feature requires that no Bluetooth devices be scanned or not paired up (including a continuous press pairing key for a short period of time), verify that ensure no problem;

- 2、BT 长连接：遥控器不主动断开蓝牙连接，断开连接后若回连超时则进入深度休眠模式，待下次按键唤醒回连；不得存在回连不上的问题，包括盒子断电回连，遥控器断电回连，静置 2 小时回连等，请验证 50 次确保无问题；

BT Long connection: The remote does not actively disconnect the Bluetooth connection, disconnect if the return timeout to enter the deep sleep mode, the Next button to wake up the connection, no return to the problem, including the box power back, remote control power back, static 2 hour back, please verify that times to ensure no problems;

- 3、抗干扰功能要求：不得存在非常影响主机 WIFI 吞吐量的问题，请确保连接遥控器时主机端 WIFI 吞吐量正常；

anti-jamming features require: there must be no problem with a very strong host WiFi throughput, make sure that the host side WiFi throughput is normal when the remote is connected;

- 4、性能要求：要求支持 $\leq 10m$ ，不得存在语音通话卡顿，丢失以及遥控器按键卡顿、丢码或连键等问题；

Performance requirements: Require support  $\leq 10m$ , there must be no voice calls Cotton, lost and the remote control button cotton, missing code or even key problems;

- 5、功耗要求：遥控器可持续使用至少 6 个月以上。

Power Requirements: Remote control can be used consistently for at least 6 months or more.

- 6、语音控制：

Speech Control:

- 1、 按语音键开始录音，遥控器收到语音引擎下发的停止录音指令后停止录音；

Press the Voice key to start recording, the remote control receives the voice engine issued stop recording instructions after stop recording;

- 2、 进入语音模式后，超过 18S 之后遥控器主动退出语音模式（此操作主要为了省电）。

After entering speech mode, the remote control actively quits speech mode after 18S (this is mainly to save power).

- 3、 语音协议：google 标准协议；  
Voice protocol: google private protocol.

- 12、 指示灯状态：

LEDs Status:

- 1、 按键：

Keys:

红外按键：红灯，闪烁 6 次

IR keys: red light, six flashes;

- 2、 配对状态：

Paring Status:

配对状态：红灯，亮 250ms，灭 250ms，蓝牙连接成功或失败结束，发现时间

120S。

Paring status: red light, bright 250ms, out of 250ms, BT connection successful or failed end, The discovery time was 120s.

配对成功: 红灯, 亮 3s 后熄灭;

Pairing successful: red light, turned on for 3s and extinguished;

配对失败: 红灯, 亮 500ms, 灭 500ms, 闪烁 3 次;

Paring fail: red light, bright 500ms, out of 500ms, flashing 3 times;

### 3、低电状态:

Low Power Status:

低电状态: 红灯, 亮 300ms, 灭 300ms, 闪烁 5 次, 低电电压 2.4V;

Low power Status: red light, bright 300ms, out of 300ms, flashing 5 times, Low electrical voltage of 2.4 V.

严重缺电状态: 红灯, 亮 100ms, 灭 100ms; 闪烁 10s, 低电电压 2.2V, 遥控器禁止工作;

Severe power shortage status: red light, on for 100ms, off for 100ms; flashing for 10s, low power voltage 2.2V, The RCU don' t working;

### 4、语音:

Voice:

语音状态: 红灯, 语音过程中常亮;

Voice status: red light, always bright in the process of speech;

| No. | RCU WH-6255      | LED Behavior                      | LED闪烁频率       |
|-----|------------------|-----------------------------------|---------------|
| 1   | BT未連接 ( IR狀態 )   | 按一下按鍵, 紅燈快閃6次                     | 100ms亮/100ms灭 |
| 2   | BT連接過程中          | 紅燈呈閃爍狀態                           | 250ms亮/250ms灭 |
| 3   | BT連接成功           | 紅燈長亮3s後熄滅                         | N/A           |
| 4   | BT連接失敗           | 紅燈慢閃3次                            | 500ms亮/500ms灭 |
| 5   | BT已經連接           | 按鍵時紅燈不亮; 使用語音時, 紅燈長亮, 識別結束, 紅燈熄滅。 | N/A           |
| 6   | 低電量狀態 ( 低於2.4V ) | 按一下按鍵, 紅燈慢閃5次                     | 300ms亮/300ms灭 |
| 7   | 弱電狀態 ( 低於2.2V )  | 按一下按鍵, 紅燈快閃10秒                    | 100ms亮/100ms灭 |

## 13、 蓝牙开机广播包格式

Bluetooth boot broadcast packet format

遥控器开关机的协议如下:

The protocol of the RCU power is as follows:

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 0x0D | 0xFF | 0x5D | 0x00 | 0x03 | 0x00 | 0x01 | 0x04 | 0xFF | 0xEE | 0xDD | 0xCC | 0xBB | 0xAA |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

遥控器实际发出的广播报文格式为:

The format of the broadcast message actually sent by the RCU is:

|         | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 01234567 |
|---------|----|----|----|----|----|----|----|----|----------|
| 0x0000: | 00 | 1F | 19 | 88 | 23 | 4C | E0 | 00 | ....#L.. |
| 0x0008: | 02 | 01 | 04 | 03 | 03 | 12 | 18 | 03 | .....    |
| 0x0010: | 19 | C1 | 03 | 0D | FF | 5D | 00 | 03 | ....]..  |
| 0x0018: | 00 | 01 | 05 | 65 | B1 | D6 | 95 | 51 | ...e...Q |
| 0x0020: | C8 | 0A | 52 | 7A |    |    |    |    | ..Rz     |

0D FF 5D 00 03 00 01 05 65 B1 D6 95 51 C8

0D 是 manufacture data 字段的总长度

FF 表示 manufacture data，它后面的字段是真正的内容，这些内容又分为固定的部分和变化部分。

固定部分是所有遥控器的开关机广播都会携带的。

可变部分是每个遥控器的广播中可能都不同的。

5D 00 表示厂商，RTK 是固定部分。

03 00 表示开关机的 command，是固定部分。

01 表示遥控器的批次，是固定部分。比如华为 M330 盒子遥控器的遥控器批次是 01，M311 盒子遥控器的遥控器批次是 02，那么对于 M330 盒子来说，它只需要匹配 01 遥控器的广播报文即可，所以 01 是固定部分。如果 M311 盒子想兼容 M311 和 M330 盒子的遥控器，那么遥控器批次就不能作为过滤条件。

05 表示按键的次数，每次按键这个值递增，是为了防止一次按键响应多次，是可变部分。

65 B1 D6 95 51 C8 表示与遥控器连接的 TV 的蓝牙地址，是可变部分。

0D FF 5D 00 03 00 01 05 65 B1 D6 95 51 C8

0D is the total length of the manufacturing data field

FF stands for manufacturing data, the fields behind it are the real content, and these contents are divided into fixed parts and changed parts.

The fixed part is carried by all remote controllers' on-off radio.

The variable part may be different in each remote control broadcast.

5D 00 indicates the manufacturer, RTK is a fixed part.

03 00 indicates that the command of the switch is a fixed part.

01 indicates the batch of the remote control, which is a fixed part.

For example, the remote control batch of Huawei M330 box remote control is 01, and the remote control batch of M311 box remote control is 02, then for M330 box, it only needs to match the broadcast message of 01 remote control, so 01 is Fixed part. If the M311 box wants to be compatible with the remote controls of the M311 and M330 boxes, the remote control batch cannot be used as a filtering condition.

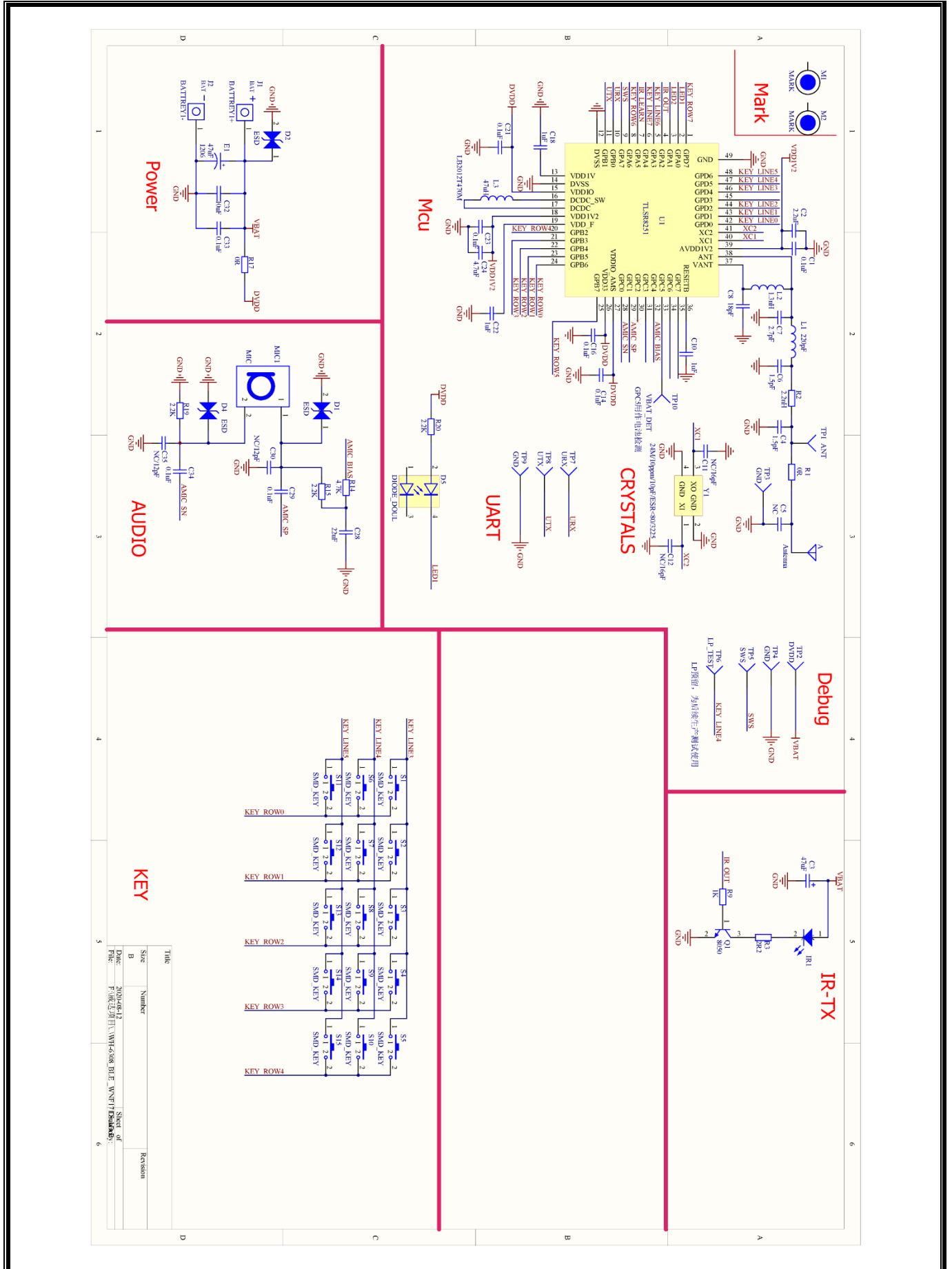
05 represents the number of key presses. The value is incremented each time the key is pressed to prevent a key press from responding

multiple times and is a variable part.

65 B1 D6 95 51 C8 represents the Bluetooth address of the TV connected to the remote control and is a variable part.

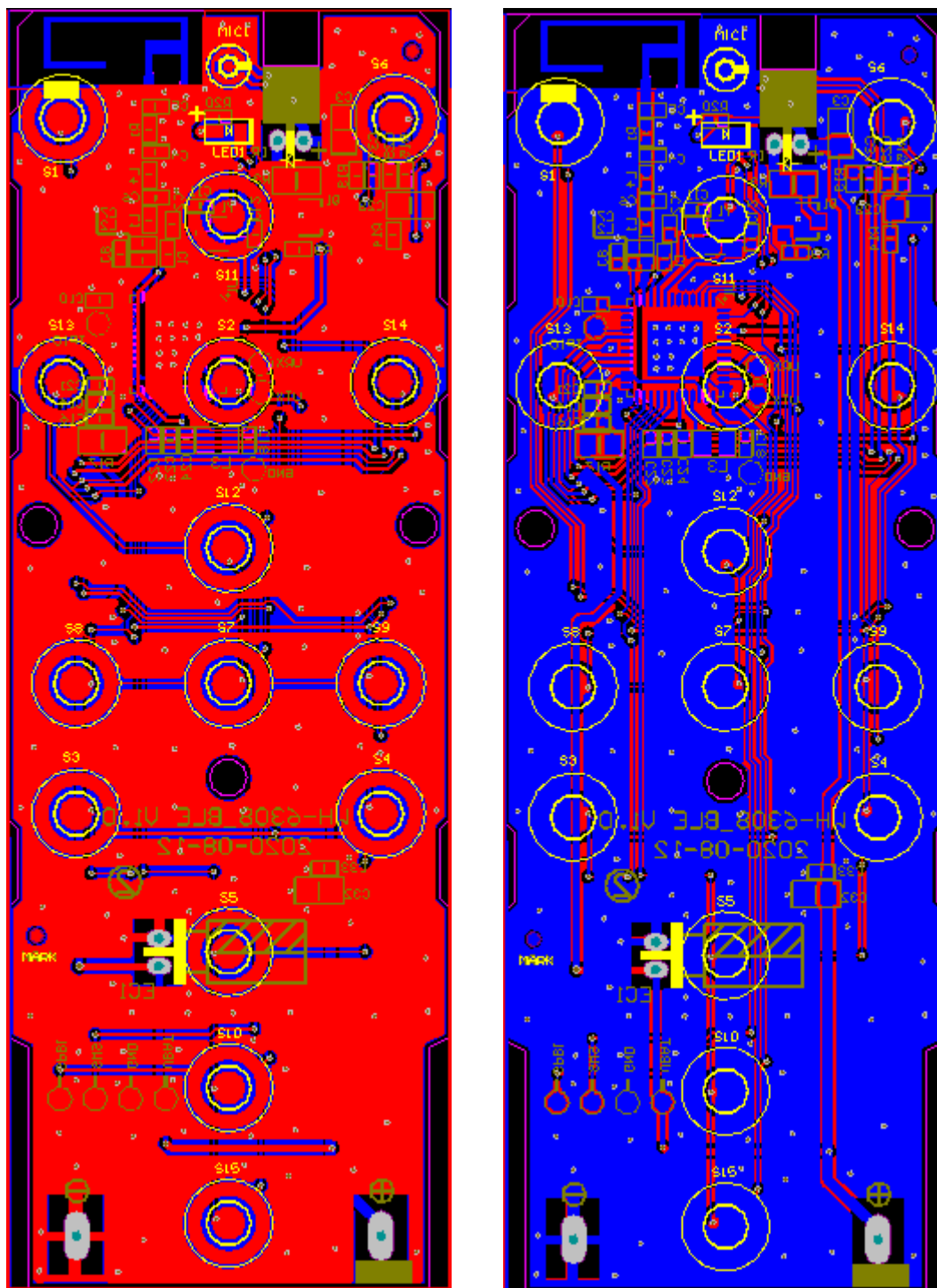
## 五、遥控器设计原理图

Schematic diagram of remote controller design



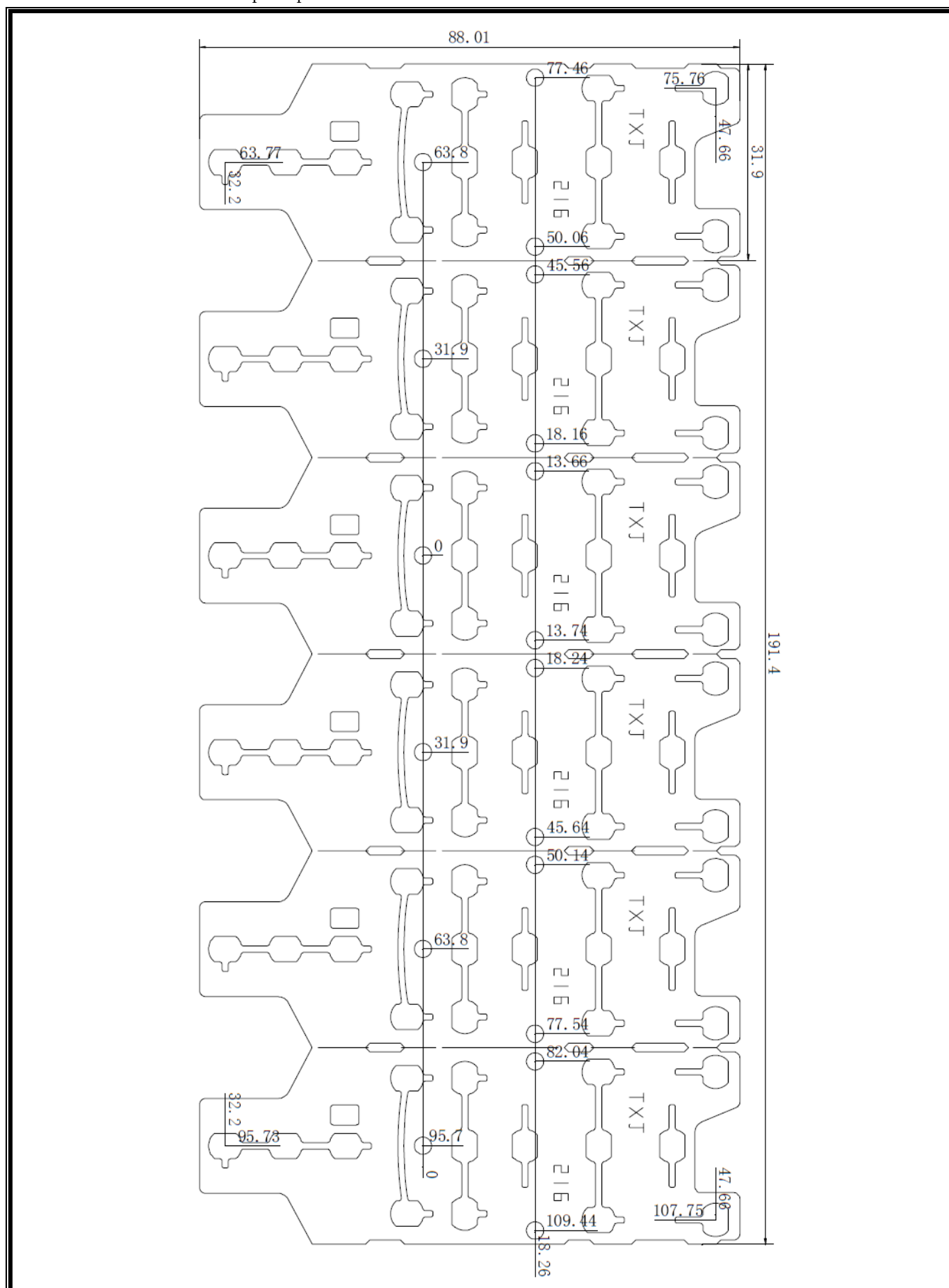
## 六、遥控器 PCB 设计图

Remote control PCB design



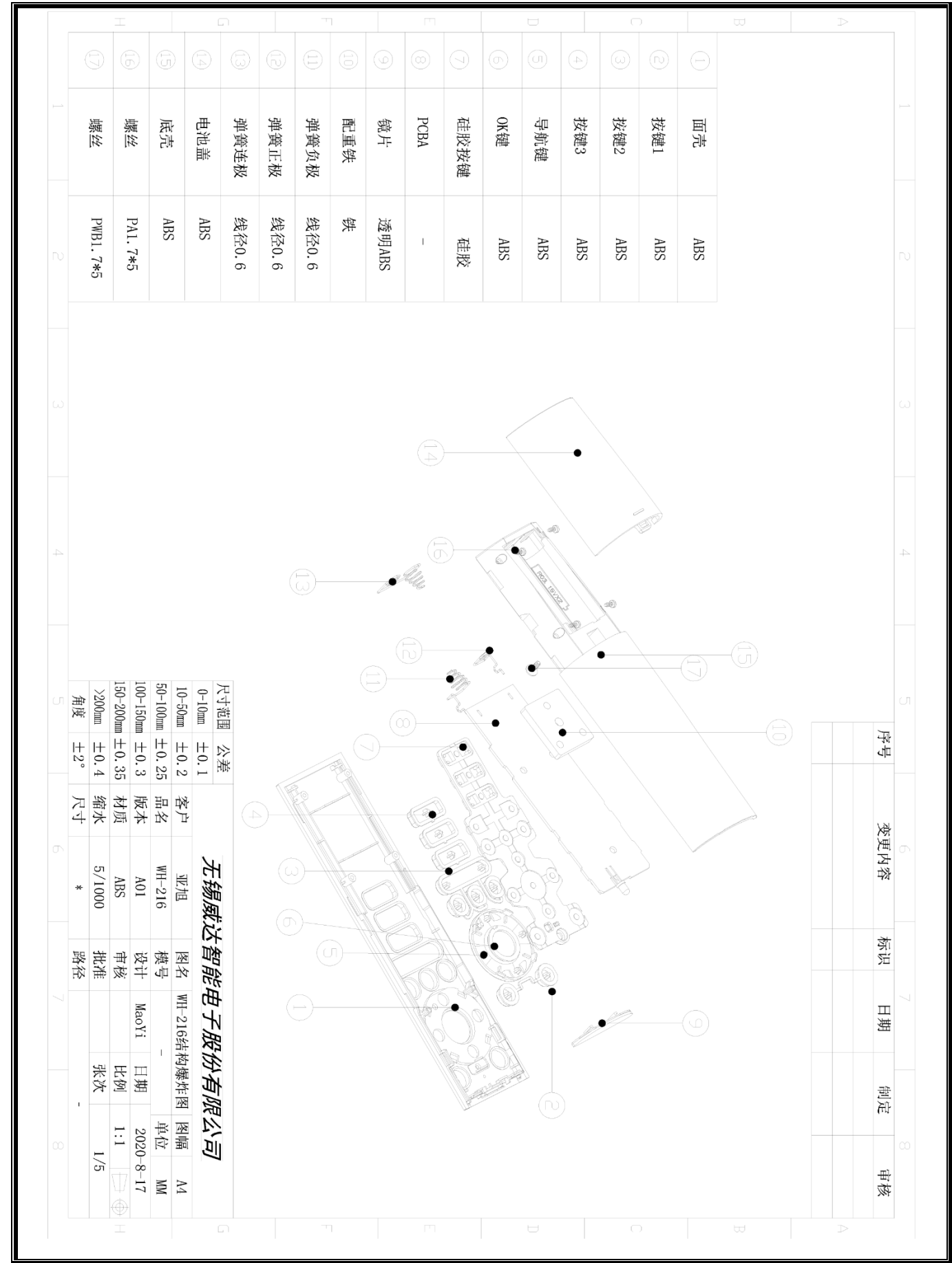
## 七、遥控器锅仔片图档

Remote control pot picture file



八、遥控器爆炸图

Remote detonation map

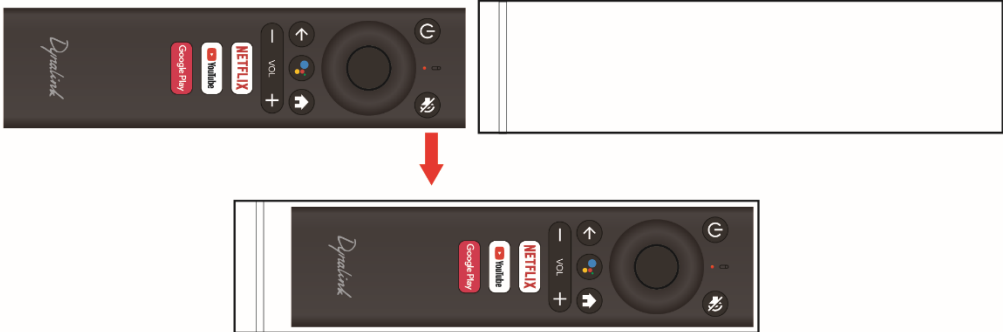


## 九、遥控器包装示意图

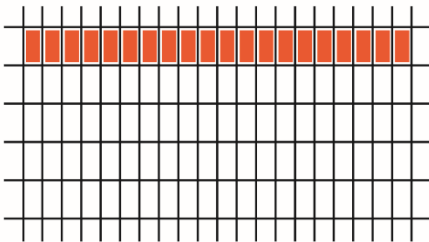
Schematic diagram of remote control package

| 序号 | 变更内容    | 标识 | 日期      | 制定   | 审核 |
|----|---------|----|---------|------|----|
| 1  | 增加透镜保护膜 |    | 20.8.19 | Nick |    |
|    |         |    |         |      |    |
|    |         |    |         |      |    |

1.将测试好的完整遥控器放入透明PE包装袋中，透镜需粘贴保护膜。

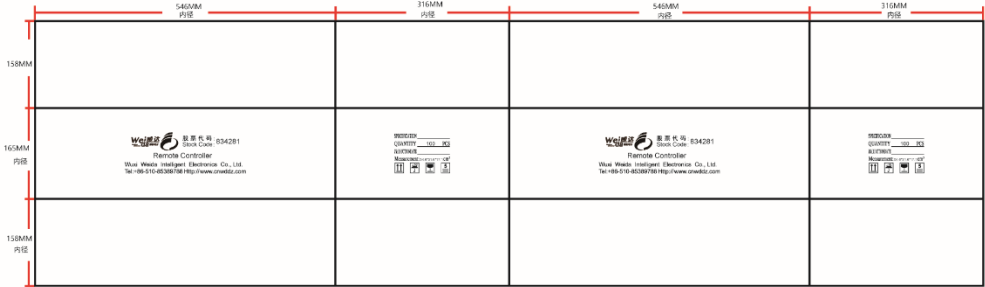


2.将包装好的遥控器放入包装箱格挡中，每个格挡1只，共计100PCS/箱。



四周增加防撞支撑，黄色区域为摆放区域。

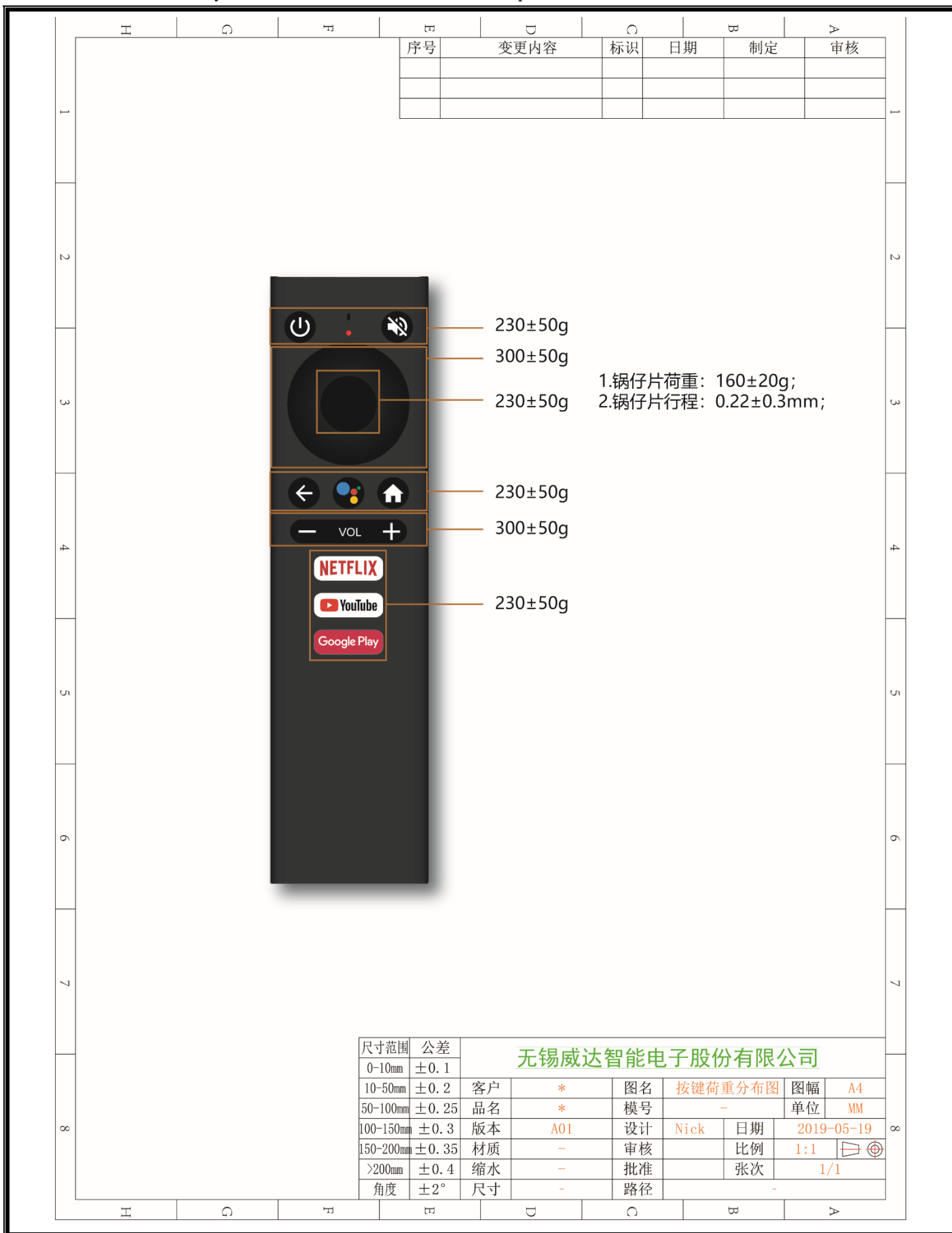
3.待整箱装完100只遥控器后，盖上衬板（格挡上下各1个），并用胶带封箱，贴上用户出货贴纸。



| 尺寸范围      | 公差    | 无锡威达智能电子有限公司 |     |    |                |    |            |
|-----------|-------|--------------|-----|----|----------------|----|------------|
| 0-10mm    | ±0.1  | 客户           | *   | 图名 | WH-6255_BLE装箱图 | 图幅 | A4         |
| 10-50mm   | ±0.2  |              |     | 模号 | -              | 单位 | MM         |
| 50-100mm  | ±0.25 | 品名           | *   | 设计 | Nick           | 日期 | 2020-07-21 |
| 100-150mm | ±0.3  | 版本           | A01 | 审核 |                | 比例 | 1:1        |
| 150-200mm | ±0.35 | 材质           | -   | 批准 |                | 张次 | 1/1        |
| >200mm    | ±0.4  | 缩水           | -   | 路径 |                |    |            |
| 角度        | ±2°   | 尺寸           | -   |    |                |    |            |

## 十、按键荷重分布图

Refer to keystroke load distribution map



Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

#### Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement. in portable exposure condition without restriction.

These devices comply with part 15 of the FCC rules, as well as the Canadian Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:: (1) the device should not cause harmful interference; and (2) the device must accept any interference received. Including interference that may cause poor operation

Ce matériel est conforme à la partie 15 des règles FCC [et aux critères d'exemption des licences industrielles canadiennes (RSS)]. L'opération doit satisfaire aux deux conditions suivantes: 1) l'équipement ne doit pas causer d'interférences nuisibles; et 2) l'équipement doit accepter toute interférence reçue, y compris toute interférence pouvant conduire à des opérations indésirables